Final WWF Project Technical Report

Project Number	01629/02
Sub-Project Title	GIS Strategic Support and Analysis for Southern Africa, WWF-SARPO (GISD)
Reporting Period	January – March 2003 & FINAL REPORT

1. Significant Change(s) to Objectives or Context during the Reporting Period

Although the original Grant Agreement was for the 10 month period 29 February-21 December 2002, the sub-agreement between WWF-US and WWF-International was only dated as of 24 April 2002, with the terms of the sub-agreement commencing 1 March and ending 31 August 2002. Funds for project implementation were finally received in the second half of May.
Nevertheless, it was possible to implement some components of the project during the first quarter of the reporting period, January-March 2002, with most project activities either taking place in the second quarter, April-June and thereafter. It was evident therefore, that an extension would be required beyond the initial completion date of 31 August, especially since important activities had still to be undertaken including the showcase presentation at the WSSD meeting in Johannesburg, South Africa, during August-September 2002, metadatabase training and regional awareness.
Accordingly an extension was applied for, and granted until March 2003. Most project activities were concluded by end December 2002. The exception was the installation of an electronic website/email server.

2. Progress towards Objectives

Development Goal: WWF SARPO contributing to ecoregion conservation in southern & eastern Africa, including the extension of wildlife as a land use and the development and support of integrated conservation and development initiatives.
Immediate Objective: Awareness, value and effective application of remotely sensed data and GIS technologies as conservation and natural resource management tools achieved through capacity building of WWF SARPO and regional partners with emphasis on:
The establishment of institutional infrastructure to ensure regional and in-country GIS sustainability
The development of GIS-based analytical and predictive approaches to problem solving
Project Activities:
A. Develop a GIS directory structure for SARPO
B. Develop a metadatabase system and appropriate search engine
C. Develop examples of remotely sensed and other geo-spatial data
D. Undertake awareness creation visits to WWF offices and partner organizations in the region
E. Establish support in respect of software, satellite imagery, training and metadata systems from

partners such as ESRI, USGS and USAID
F. Initiate GIS support (hardware, software and appropriate data) for one WWF regional office
G. Write longer-term GIS/Natural Resource Management Project proposal

Progress

A. Develop a GIS directory structure for SARPO

The use of a common and compatible directory structure is an important incentive for participation in a GIS network. As a precursor to such development and use, a review and assessment of the current status of facilities and capacity in the WWF SARPO GIS Unit in Harare was undertaken by a team of consultants working with SARPO GIS personnel during June and July 2002. This included assessments of hardware, software and a data inventory with recommendations for management, maintenance and institutional sustainability of the GIS Unit. The inventory has been written to CD and appropriately backed-up.

Other data sources have been used to populate the new directory structure as well as being backed up on CDs. Conversions of shape files from TNT Mips to ArcInfo and vice versa have been undertaken. This work has continued through the life of the project. The SARPO GIS Technician Mr. Wilson Munyaradzi was supported by the project until March 2003.

B. Develop a metadatabase system and appropriate search engine

Lack of access and duplication of effort can be avoided through making data more accessible through a common directory, databases and search engine as well as encouraging communication and cooperation across the region and between and within countries. At SARPO in Harare, a start has been made on the development of a directory structure together with data input and the maintenance and up-dating of the existing metadatabase, as outlined above. In this regard the Namibian experience, including that of the LIFE Project has been drawn upon extensively. The development of a search engine has still to be undertaken and will continue beyond the time frame of this initial project.

C. Develop examples of remotely sensed and other geo-spatial data

An existing Namibian example of the application of remotely sensed data was "packaged" as a showcase for the World Summit on Sustainable Development (WSSD), held in Johannesburg, South Africa during 26 August-4 September. Together with other examples of such data, this attractive and compelling showcase was well received by visitors to the Ubuntu Village exhibition. The approach of creating synergies between wide-ranging partners to promote the use of geospatial data provided a model presentation which was appreciated by a wide audience.

The presentation, *"GIS support to Community-Based Natural Resource Management in Namibia"*, prepared by Namibian partners, demonstrates how the use of GIS and remote sensing technologies are allowing informed decisions to be made at community level. In turn these technologies are making a significant contribution to sustainable development, the empowerment of rural communities and promoting the sustainable management of natural resources. This presentation, constituted the Project's contribution to the WSSD showcase. It has been posted on an appropriate website and is available as a CD.

D. Undertake awareness creation visits to WWF offices and partner organizations in the region

Central to the longer term regional GIS strategy is the support of "user groups" in the region. This

activity was addressed at the annual SARPO Conservation Planning meeting when the proposed regional GIS strategy was outlined. Feedback to SARPO senior project personnel on the "clean up" and development of the directory structure was provided in Harare during July 2002 and an awareness visits was undertaken to Tanzania in September 2002 where visits were made to the WWF Tanzania Program Office and other institutions in Dar es Salaam. The intention is to create incentives for supporting the proposed strategy and promoting the adoption of GIS technologies, robust data collection and analysis. The work undertaken under activities A & B above provide the platform for this initiative.

E. Establish support in respect of software, satellite imagery, training and metadata systems

The coordination of initial support of software from Environmental Systems Research Institute (ESRI) through Geographical Information Management Systems (GIMS) has been undertaken and a range of appropriate ESRI software has been donated to the Project, and supplied to the Harare GIS Unit and to the Namibian Ministry of Environment & Tourism. The donation package comes with a one year maintenance charge. The following products, with maintenance costs met from the project budget, have been obtained through GIMS:

SARPO Harare

Item	**Units**	**Cost/Unit**	**Total cost (USD$)**
ArcView 3.3	5	400	2000
Spatial Analysis for 3.3	1	400	400
ArcView 8.3	2	600	1200
Spatial Analysis for 8.3	1	600	600
3D Analyst for 8.3	1	600	600
Total			**4800**

MET Namibia

ArcView 3.3	2
ArcView Extensions	2
ArcView 8.2	3
ArcView Extensions	2
ArcPad	4

Please note that MET are meeting the maintenance costs for the Namibian order.

Metadatabase training (also linked to Activity B, Development of metadatabase) was planned in conjunction with EROS Data Center, USGS. A week long training workshop was provided by USGS personnel during September 9-13 2002 at the Scientific & Industrial Research & Development Center's (SIRDC) Environment and Remote Sensing Institute (ERSI) in Harare. Participants numbered 14 and included personnel from the National Remote Sensing Directorate of Forestry and Directorate of Environmental Affairs both from MET, Namibia and the Forestry Commission, Surveyor General's Office, Center for Applied Social Sciences (CASS), ERSI-SIRDC and WWF SARPO in Zimbabwe.

F. Initiate GIS support (hardware, software and appropriate data) for one WWF regional office

This is linked to Activities A, B & E above and has addressed selected needs of the Harare GIS Unit and a number of requirements for MET in Namibia. The initial focus on supporting the Harare GIS Unit with its already well established facilities is linked to SARPO's role in developing a regional GIS strategy out of Harare, and acting as the central provider of a suite of services (roll out systems, technical support,

training, incentives for data sharing, fund provision etc) to user groups. Consequently, SARPO has to be properly equipped in terms of technical and human capacity to do so. A website and email server was purchased and installed with the balance of the remaining project funds. This facility will allow the storage, dissemination and exchange of image data and information within the regional program and with regional partners.

G. Prepare and write longer term GIS/NRM project proposal

The Miombo Ecoregion Leader has undertaken this activity. Appropriate proposals have been developed and/or submitted, building on the progress that has been achieved during the life of this project and the longer-term proposal developed by SARPO in October 2001.

3. Achievements and Impact

Despite the delays in finalizing the funding of this project, considerable progress has since been made. Important achievements included the WSSD showcase, metadatabase training, networking with local, regional and international GIS practitioners and re-structuring the GIS facilities in Harare. All this should contribute to both the long term technical capacity and institutional sustainability of a regional GIS strategy.
Describe constraints which have affected progress (or refer to logframe) and measures taken to address them.
Whilst a delay in start up time has been a constraint to progress, a revised workplan was drawn up to cope with this and with the extension to March 2003, completion of this important first phase of the GIS strategy has been achieved.

4. Variances between budget and actual

The Financial Report has been submitted by SARPO Finance & Administration. The project budget was fully and effectively spent.

5. Targets and expected Developments for the next Reporting Period

Not applicable

6. Lessons learned and New Opportunities

- A balance has to be achieved between WWF SARPO's primary role in conservation and natural resource management activities and the degree to which it wishes to pursue and build its capacity in "state of the art" GIS/Remote Sensing technology
- Development of a regional GIS strategy and its component parts, such as the "balance" referred to above, and details such as choice of software, requires "buy-in" from both SARPO itself as well as its partners
- To achieve this "buy-in" requires "incentives" to do so, such as data access and sharing, within and amongst GIS user groups
- The process also requires a "champion" who can not only develop a regional vision for a GIS strategy but can also communicate it to SARPO and its partners

These lessons present both opportunities and challenges in the process of developing a regional GIS strategy.

Project Monitoring Terms: Definitions

Performance

Indicators which illustrate the completion of incremental outputs and activities (usually at the project level) which, when taken together, should generate significant conservation achievements (i.e. our targets). This is the level of information normally covered in the Technical Progress Report. *Examples*:

- Number of educational and training materials published;
- Awareness raising and capacity building activities;
- Number of conservation specialists trained;

Note: Indicators of *performance* provide the information necessary to define the achievement of individual **outputs** and **activities** flowing from defined conservation targets. Within the context of a project annual workplan, successful completion of individual activities are often, in and of themselves, indicators of performance.

Responsibility: WWF projects and programs are fully responsible for tracking performance related indicators.

Timeframe: Short-term. Progress at the output/activity level should be measurable at a minimum on a six-monthly basis.

Scale: Medium to small scale. Performance indicators are most often tracked at the project level.

***Achievement*:**

Indicators of significant accomplishments or successes which will reduce pressure on the environment of socio-economic origin or improve legislation and policy towards the protection of the environment in priority ecoregions and biomes. May also illustrate significant trends or changes towards a reduction of these pressures. *Examples*:

- Establishment of new protected areas;
- Sustainable management, or the development of management plans, for protected areas or important habitats/ecoregions;
- Signing and ratification of international conservation conventions.

Note: indicators of achievement are found within all priority areas of WWF, for example in our biome/eco-regional components as well as other regionally defined priority areas, such as environmental education, capacity building, etc. Normally, indicators of *achievement* define progress towards the objective outlining each conservation priority, and particularly the **targets** which flow from those objectives.

Responsibility: WWF is responsible for ensuring the necessary conditions for attaining conservation achievements. However, most achievements will require a close association with partner agencies and institutions.

Timeframe: Medium term. Once a target is established, it is not unreasonable to expect measurable change within 2 to 3 years.

Scale: Large scale, country-based. Given that the indicators described here are largely socio-economic and political in nature, they are most often manifested on a national basis.

Impact:

Indicators which show trends or significant changes in the "state" (quality, health) of priority habitats, ecoregions, biomes and species. *Examples*:

- Change in extent or quality of habitat over time
- Change in population and distribution of key indicator species over time

Note: indicators of impact, within the context of WWF's strategic planning framework, are found only in relation to priority biomes and ecoregions and are measured only in ecological or biological terms. Normally, indicators of *impact* describe progress towards the **mission, overall goal, vision** as well as the **global and regional priorities** of the program.

Responsibility: In most programs, WWF will not have the capacity necessary to comprehensively monitor conservation impact. Partnership arrangements will be necessary, and in many cases WWF may play a supporting rather than leadership role in the monitoring of impact.

Timeframe: Long term. A minimum of five years will likely be required to detect significant change in indicators of this type.

Scale: Very large scale. Given that the above defines "impact" in biological terms, it is suggested that the minimum scale at which to effectively measure impact and produce meaningful results is at the level of an ecoregion.